

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/Ala Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-006362**Date Inspected:** 25-Mar-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1845**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 645**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Xu Le Feng, Guo Yan Fei**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower and OBG Components**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector George Goulet was present during the times noted above for observations relative to the work being performed.

Bay 11

This QA Inspector randomly observed the following work in progress in Bay 11:

SAW welding of weld joints ESD1-FBSA3-2A/C-2A located on PCMK east tower, lift 3. Welder was identified as 207463. ZPMC QC was identified as Xu Le Feng (QC1). The welding variables recorded by QC1 appeared to comply with WPS-B-T-2221-B-U3c-S-2. Assisting QC1 at this location and appearing to be monitoring the welding was ZPMC QC Inspector He Gen, who was not a CWI.

FCAW welding, using the northeast gantry, of weld joints ESD1-FASA3-2E/E-26, 27, 57, 58 located on PCMK east tower, lift 3, skin A. Welders were identified respectively as 202812, 067501, 068554, 070072. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2332-Tc-P5-F.

Assisting QC at this location and appearing to be monitoring the welding was ZPMC QC Inspector He Gen, who was not a CWI.

FCAW welding, using the northwest gantry, of weld joints ESD1-FASA3-2E/E-5, 6, 36, 37 located on PCMK east tower, lift 3, skin A. Welders were identified respectively as 058972, 047701, 059525, 049220. ZPMC QC was identified as QC1. The welding variables recorded by QC1 appeared to comply with WPS-B-T-2332-Tc-P5-F. The welder identified as 058972 was welding by hand and not using the gantry. Assisting QC at this location and appearing to be monitoring the welding was ZPMC QC Inspector He Gen, who was not a CWI.

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Bay 9 - PMT

This QA inspector monitored OBG Production Monitoring Test (PMT) #1 for deck panels DP159-001 and DP211-001 at Gantry #2. Prior to PMT #1, the magnetic particle test (MT) of the tack welds was noted on the test panel as having been performed by ZPMC MT Inspector Zho Dong Yun. The visual inspection of tack welds and root gap was performed by ABF Representative Cao Hai Zhou (ABF), ZPMC CWI Guo Yan Fei (QC2), and this QA inspector. The start time for welding of PMT #1 was approximately 0014 hours on Thursday, 3/26/09 and the finish time was approximately 0051 hours. This QA inspector randomly verified and documented the welding amperage, voltage and travel speed during the gas metal arc welding (GMAW) and submerged arc welding (SAW) processes, welds 1 thru 6 at the completion of both the GMAW root pass and SAW cover pass. The welds were visually inspected by ABF, QC2 and this QA inspector. QC2 and ABF informed QA Inspector that all six welds were acceptable and QA inspector concurred. This QA inspector randomly witnessed ZPMC ultrasonic testing (UT) inspector, identified as Xue Hai Rong, perform UT on each of the 500 mm test welds for depth of penetration and conformance. This QA inspector selected fifteen designated locations for macroetch sampling per contract requirements. Each macroetch location was stamped by ZPMC personnel with the number 211, the letter O, and an individual macroetch identifying number for each macroetch. After removal from each of the weld test specimens and polishing of the selected end, the macroetches were evaluated with a 7X optical comparator and a 10X optical comparator and accepted by QC2, ABF, and this QA inspector.

All fifteen sample macros appeared to meet requirements and were noted to appear acceptable. See Caltrans U-ribs PMT Inspection Sheet, ZPMC production monitoring test plate inspection report, and Caltrans Macro Etch Log - all dated 3/26/2008 for additional information.

Summary of Conversations:

As noted above, and this QA inspector asked each QC noted above if all the welding variables observed by him appeared to comply with the appropriate WPS, including preheat and interpass temperature requirements according to thickness of the thickest member being welded. Each QC showed this QA Inspector that he was carrying the appropriate temperature sticks to monitor the minimum and maximum preheat and interpass temperatures and replied that all he observed did appear to comply.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By:	Goulet, George	Quality Assurance Inspector
Reviewed By:	Carreon, Albert	QA Reviewer
